

AGENDA ITEM III B

PROPOSED NEW ACADEMIC PROGRAM

LOUISIANA STATE UNIVERSITY- ALEXANDRIA

B.S. IN MATHEMATICS

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BACKGROUND INFORMATION

The University currently offers a major in mathematics within its existing Bachelor of Liberal Studies. The existing degree is comparable to the proposed program, but it is vastly more common for such degrees to be called Bachelor of Science degrees in Mathematics. Hence the proposal. The University also offers a pre-engineering course of studies with a popular mathematics concentration.

STAFF SUMMARY

1. Description

The curriculum consists of general education (39 hours), major requirements (42 hours, including 15 hours of math electives), and 51 hours of electives (distributed thus: 14 hours required, 37 approved). Total: 126 hours. Major coursework includes (by level):

1000: College Algebra, Plane Trigonometry, Precalculus, Analytic Geometry, Calculus I and II
2000: Fundamentals of Mathematics, Multidimensional Calculus, Selected Topics in Mathematics
3000: Statistical Methods, Elementary Differential Equations, Linear Algebra, Probability
4000: Geometry, Advanced Calculus I and II, Complex Variables, Intro. to Topology, Mathematical Statistics, Numerical Analysis, Number Theory, Abstract Algebra, Partial Differential Equations, History of Mathematics, Senior Seminar.

The University notes that “the number of free electives students can use... is restricted by the fact that (1) students must complete a minimum of 45 hours at the 3000 level or above; and (2) students must complete at least 15 hours of 4000-level courses.” The proposed curriculum allows a student to major in mathematics and also take a minor in education.

2. Need

This is a core undergraduate degree typical of those offered at four-year undergraduate universities.

3. Students

Based on enrollment in the mathematics concentration of the university's pre-engineering course of studies, as well as in coursework common to the proposed curriculum, the University anticipates the following enrollment in the new program:

	Year 1	Year 2	Year 3	Year 4	Year 5
Lower level	7	8	10	12	14
Upper level	9	8	9	11	12
Graduates	3	4	3	4	5

The University notes that its recently-approved secondary teaching certification program "will undoubtedly lead to additional enrollments."

4. Faculty

Directly associated with the program will be four full professors, two associate professors, and three assistant professors. All have terminal degrees in the discipline and represent a broad range of specialties. Seven of the nine faculty earned Ph.D.'s after 1991.

The University reports that there were 344 students in math and statistics courses last semester, producing a student to faculty ratio of 38 : 1. The proposal did not include information about instructors or adjunct professors, which would affect that ratio.

As for new faculty, the University argues: "When combined with general student population growth, anticipated student participation will require two additional faculty over the first five years of program operation. Funds to accommodate this faculty growth are included in the budget presented later in the document."

The staff notes that the budget provides for the additional hiring of one new math faculty only. Needs for the second position are not apparent to staff.

5. Library

During 2004 and 2005, the library spent approximately \$11,136 to upgrade holdings in mathematics.

Some additions to the collection will be needed: "the library currently provides 1,450 book titles in the area... More than 60 databases are available on campus and by remote access, including MathSciNet, JSTOR, and Academic Search Premier. The library provides 182 journal titles in the area of mathematics. Additional materials will be added in response to specific new course development." A minimum of \$3,000 annually will be needed to maintain and upgrade the collection.

The University participates fully in the statewide library network.

6. Facilities and Equipment

The program will use existing office and classroom facilities, which the university describes as adequate. Additional equipment (projectors, smartboards, computer peripherals, etc.) has been purchased to support classroom instruction. The University states that “no new construction, remodeling, or specialized equipment is required” to offer the new program.

Eventually, the program’s offices and classrooms will be moved to a new Multipurpose Classroom Building, the design stage of which was completed recently.

7. Administration

The program will be administered by the existing Department of Mathematics and Physical Sciences. The chairman reports directly to the Vice Chancellor for Academic and Student Affairs. The new program will not affect this current administrative structure.

8. Accreditation

No special accreditation is available for programs in mathematics. Accreditation of related mathematics teacher education programs through NCATE is currently being pursued.

9. Budget

The University proposes to hire one additional full-time faculty member during years two to five and would pursue this hire “regardless of the program creation.”

Projected **new additional costs** are as follows:

	Year 1	Year 2	Year 3	Year 4
Faculty	0	\$ 46,300	\$ 48,152	\$ 50,078
Library	0	0	0	0
Equipment (start-up)	0	2,101	0	0
Travel	0	1,000	1,000	1,000
Supplies	\$ 1,631	1,655	1,679	1,704
Total	\$ 1,631	\$ 51,056	\$ 50,831	\$ 52,782

Projected **revenue** for the program is as follows:

	Year 1	Year 2	Year 3	Year 4
State Appropriation	\$ 817	25,558	24,587	26,423
Self-Generated	815	25,498	26,244	26,359
Total	\$ 1,632	\$ 51,056	\$ 50,831	\$ 52,782

STAFF ANALYSIS

The curriculum compares favorably with similar degrees across the state and is compliant with Board of Regents curricular policies. Need for the program is established by its being a core academic offering of any four-year undergraduate institution. Faculty are already in place; no new courses need to be created. An additional faculty member is slated for hire during year two; this hire is part of the University's ongoing expansion as it assumes four-year undergraduate status. Library and facility resources appear to be adequate. Administrative arrangements will not be affected. No accrediting agency exists for mathematics, but NCATE accreditation of the University's related mathematics teacher education program will be important.

The only concern the staff has is that projected numbers of enrollees and graduates are very low. The staff believes these numbers are conservative, as new teacher certification requirements will likely produce a higher enrollment than those suggested by a review of past enrollment data. As a core undergraduate offering the University should make every effort to encourage an adequate and steady enrollment of math majors and the production of math graduates.

The staff recommends approval.

STAFF RECOMMENDATION

The staff recommends that the Academic and Student Affairs Committee grant approval for the proposed B.S. in Mathematics (CIP 27.0101) at Louisiana State University-Alexandria, effective immediately.